What is Claimed is:

1. A control system for a plant, including a controller for controlling said plant based on a controlled object model which is obtained by modeling said plant,

said controlled object model being modeled using an input and an output of said plant which are sampled at intervals of a sampling period which is longer than a control period of said controller, and

the sampled input of said plant being a filtered control output which is obtained by filtering an output of said controller,

wherein said controller carries out a control process of said plant at intervals of the control period.

2. A control system according to claim 1, wherein said controller performs a feedback control of calculating the output of said controller to make the output of said plant coincide with a target value, said controller being capable of specifying a damping characteristic of a deviation between the output of said plant and the target value.

3. A control system according to claim 2, wherein said controller is a sliding mode controller.

4. A control system according to claim 3, wherein said sliding mode controller calculates a value of a switching function defined as a linear function of the deviation between the output of said plant and the target value, and a sampling time interval of the deviation which is used to calculate the value of the switching function is equal to the sampling period.

5. A control system according to claim 1, further including an identifier for identifying at least one model parameter of the controlled object model, wherein said controller calculates the output of said controller using the at least one model parameter identified by said identifier, and said identifier identifies the at least one model parameter at intervals of the

sampling period, using the filtered output of said controller.

6. A control system according to claim 1, wherein said plant includes a throttle valve of an internal combustion engine and a throttle valve actuating device having an actuator for actuating said throttle valve, and said controller calculates a parameter for determining a control input to be applied to said throttle valve actuating device to make an opening of said throttle valve coincide with a target opening.

7. A control system for a plant, comprising:

an identifier for identifying at least one model parameter of a controlled object model which is obtained by modeling said plant;

a controller for controlling said plant using the at least one model parameter identified by said identifier, said controller carrying out a control process of said plant at intervals of a control period; and

a filter for filtering an output of said controller,

wherein said controlled object model is modeled using an input and an output of said plant which are sampled at intervals of a sampling period which is longer than the control period of said controller, and said identifier identifies the at least one model parameter based on an output of said filter and the output of said plant.

8. A control method for a plant, comprising the steps of:

a) modeling said plant using an input and an output of said plant which are sampled at intervals of a sampling period, to obtain a controlled object model of said plant; and

b) carrying out a control process of said plant based on the controlled object model at intervals of a control period which is shorter than the sampling period, to calculate a control output applied to said plant,

wherein the sampled input of said plant is a filtered control output which is obtained by filtering the control output.

9.   A control method according to claim 8, wherein a feedback control of calculating the control output is performed to make the output of said plant coincide with a target value, and a damping characteristic of a deviation between the output of said plant and the target value being specifiable.

10.   A control method according to claim 9, wherein the feedback control is a sliding mode control.

11.   A control method according to claim 10, further including the step of calculating a value of a switching function defined as a linear function of the deviation between the output of said plant and the target value, wherein a sampling time interval of the deviation which is used to calculate the value of the switching function is equal to the sampling period.

12.   A control method according to claim 8, further including the step of identifying at least one model parameter of the controlled object model, wherein the control output is calculated using the at least one identified model parameter, and the at least one model parameter is identified at intervals of the sampling period, using the filtered control output.

13.   A control method according to claim 8, wherein said plant includes a throttle valve of an internal combustion engine and a throttle valve actuating device having an actuator for actuating said throttle valve, and a parameter for determining a control input to be applied to said throttle valve actuating device is calculated to make an opening of said throttle valve coincide with a target opening.

14.   A control method for a plant, comprising the steps of:
a)   identifying at least one model parameter of a controlled object model which is obtained by modeling said plant;

b) carrying out a control process of said plant using the at least one identified model parameter at intervals of a control period, to calculate a control output applied to said plant,; and

c) filtering the control output,

wherein said controlled object model is modeled using an input and an output of said plant which are sampled at intervals of a sampling period which is longer than the control period, and the at least one model parameter is identified based on the filtered control output and the output of said plant.

15. A computer program for causing a computer to carry out a control method for a plant, comprising the steps of:

a) identifying at least one model parameter of a controlled object model which is obtained by modeling said plant;

b) carrying out a control process of said plant using the at least one identified model parameter at intervals of a control period, to calculate a control output applied to said plant,; and

c) filtering the control output,

wherein said controlled object model is modeled using an input and an output of said plant which are sampled at intervals of a sampling period which is longer than the control period, and the at least one model parameter is identified based on the filtered control output and the output of said plant.

16. A computer program according to claim 15, wherein a feedback control of calculating the control output is performed to make the output of said plant coincide with a target value, and a damping characteristic of a deviation between the output of said plant and the target value being specifiable.

17. A computer program according to claim 16, wherein the feedback control is a sliding mode control.

18. A computer program according to claim 17, further including

the step of calculating a value of a switching function defined as a linear function of the deviation between the output of said plant and the target value, wherein a sampling time interval of the deviation which is used to calculate the value of the switching function is equal to the sampling period.

19. A computer program according to claim 15, further including the step of identifying at least one model parameter of the controlled object model, wherein the control output is calculated using the at least one identified model parameter, and the at least one model parameter is identified at intervals of the sampling period, using the filtered control output.

20. A computer program according to claim 15, wherein said plant includes a throttle valve of an internal combustion engine and a throttle valve actuating device having an actuator for actuating said throttle valve, and a parameter for determining a control input to be applied to said throttle valve actuating device is calculated to make an opening of said throttle valve coincide with a target opening.